Docket No.: 006301 USA/Consilium/Consilium

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

re Application of

Badri N. KRISHNAMURTHY et al.

Serial No. 09/928,474

Group Art Unit: 2171 Filed: August 14, 2001 For:

: Examiner:

EXPERIMENT MANAGEMENT SYSTEM, METHOD AND MEDIUM

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Commissioner for Patents
D.C. 20231

Ordance with the provisions of 37 C.F.R. 156, 167

Honorable Commissioner for Patents Washington, D.C. 20231

Sir:

In accordance with the provisions of 37 C.F.R. 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the documents listed on the attached forest PTO-1449. It is respectfully requested that the documents be expressly considered during the prosecution of this application, and that the documents be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This submission does not constitute a representation that a search has been made or that no better art exists and does not constitute an admission or representation that any of the listed documents is material or constitutes prior art. If it should be determined that any of the listed documents does not constitute prior art under the United States law, Applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such document.

Serial No. 09/928,474

Please charge the fee of \$180.00 under 37 CFR 1.17(p) to Deposit Account No. 08-0219. The Commissioner is hereby authorized to charge any additional fees that may be required for this submission, or credit any overpayment to deposit account no. 08-0219.

Respectfully submitted,

HALE AND DORR LLP

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INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)

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FILING DATE August 14, 2001 GROUP 2171

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	3,205,485	09/07/65	Noltingk			10/21/60
	3,229,198	01/11/66	Libby			09/28/63
	4,000,458	12/28/76	Miller et al.			08/21/7
	4,302,721	11/24/81	Urbanek et al.			05/15/7
	4,750,141	06/07/88	Judell et al.			11/26/8
	4,757,259	07/12/88	Charpentier			11/05/8
	4,938,600	07/03/90	Into			02/09/8
***	5,283,141	02/01/94	Yoon et al.			03/05/9
	5,338,630	08/16/94	Yoon et al.			11/18/9
	5,485,082	01/16/96	Wisspeintner et al.			04/05/9
	5,497,381	03/05/96	O'Donoghue et al.			06/01/9
	5,511,005	04/23/96	Abbe et al.			02/16/9
	5,519,605	05/21/96	Cawlfield			10/24/9
	5,526,293	06/11/96	Mozumder et al.			12/17/9
	5,541,510	06/30/96	Danielson			04/06/9
	5,546,312	08/13/96	Mozumder et al.			02/24/9
	5,553,195	09/03/96	Meijer			09/29/9
	5,602,492	02/11/97	Cresswell et al.			04/28/9
	5,617,023	04/01/97	Skalski			02/02/9
	5,627,083	05/06/97	Tounai			05/12/9
	5,642,296	06/24/97	Saxena			07/29/9
· · · · · · · · · · · · · · · · · · ·	5,646,870	07/08/97	Krivokapic et al.			02/13/9
-	5,649,169	07/15/97	Berezin et al.			06/20/9
	5,654,903	08/05/97	Reitman et al.			11/07/9
	5,663,797	09/02/97	Sandhu			05/16/9
	5,665,199	09/09/97	Sahota et al.			06/23/9
	5,666,297	09/09/97	Britt et al.			05/13/9

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

DATE CONSIDERED

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INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)

ATTY. DOCKET NO. 006301
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Technology Center 2100

APPLICANT

Badri N. KRISHNAMURTHY et al.

FILING DATE August 14, 2001 GROUP 2171

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	5,667,424	09/16/97	Pan			09/25/96
	5,674,787	10/07/97	Zhao et al.			01/16/96
	5,719,796	02/17/98	Chen			12/04/95
	5,735,055	04/07/98	Hochbein et al.			04/23/96
	5,761,064	06/02/98	La et al.			10/06/95
	5,777,901	07/07/98	Berezin et al.			09/29/95
	5,787,021	07/28/98	Samaha			12/18/95
	5,787,269	07/28/98	Hyodo			09/19/95
	5,825,913	10/20/98	Rostami et al.			07/18/95
	5,857,258	01/12/99	Penzes et al.			05/12/94
	5,910,846	06/08/99	Sandhu			08/19/97
	5,943,237	08/24/99	Van Boxem			10/17/97
	5,960,185	09/28/99	Nguyen		· · · · · · · · · · · · · · · · · · ·	06/24/96
-	5,961,369	10/05/99	Bartels et al.		-	06/04/98
	5,978,751	11/02/99	Pence et al.			02/25/97
	6,017,771	01/25/00	Yang et al.			04/27/98
•	6,036,349	03/14/00	Gombar			07/26/96
	6,064,759	05/16/00	Buckley et al.			11/06/97
	6,072,313	06/06/00	Li et al.			06/17/97
	6,097,887	08/01/00	Hardikar et al.			10/27/97
	6,108,092	08/22/00	Sandhu		· · · · · · · · · · · · · · · · · · ·	06/08/99
	6,127,263	10/03/00	Parikh			07/10/98
	6,136,163	10/24/00	Cheung et al.			03/05/99
	6,141,660	10/31/00	Bach et al.			07/16/98
	6,143,646	11/07/00	Wetzel			06/03/97
	6,148,099	11/14/00	Lee et al.			07/03/97
	6,148,239	11/14/00	Funk et al.			12/12/97

EXAMINER

DATE CONSIDERED



ATTY. DOCKET NO. 006301 USA/Consilium/ConsiliumRECEIVED

SERIAL NO. 09/928,474

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APPLICANT Technology Center 2100 Badri N. KRISHNAMURTHY et al.

FILING DATE GROUP August 14, 2001 2171

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	6,159,075	12/12/00	Zhang			10/13/99
	6,159,644	12/12/00	Satoh et al.			03/06/96
_ ,.	6,161,054	12/12/00	Rosenthal et al.		 	09/17/98
	6,169,931	01/02/01	Runnels		<u> </u>	06/29/98
	6,172,756	01/09/01	Chalmers et al.			12/11/98
	6,173,240	01/09/01	Sepulveda et al.			11/02/98
	6,191,864	02/20/01	Sandhu			02/29/00
	6,204,165	03/20/01	Ghoshal			06/24/99
	6,210,983	04/03/01	Atchison et al.			06/15/99
	6,214,734	04/10/01	Bothra et al.			11/20/98
	6,217,412	04/17/01	Campbell et al.			08/11/99
	6,222,936	04/24/01	Phan et al.			09/13/99
	2001/0001755	05/24/01	Sandhu et al.			12/29/00
	2001/0003084	06/07/01	Finarov	·		12/04/00
·····	6,246,972	06/12/01	Klimasauskas			05/27/99
	6,276,989	08/21/01	Campbell et al.			08/11/99
	6,280,289	08/28/01	Wiswesser et al.			11/02/98
· ·	6,284,622	09/04/01	Campbell et al.			10/25/99
	6,287,879	09/11/01	Gonzales et al.			08/11/99
· - · · · · · · · · · · · · · · · · · ·	6,290,572	09/18/01	Hofmann			03/23/00
	6,304,999	10/16/01	Toprac et al.			10/23/00
	2001/0030366	10/18/01	Nakano et al.			03/07/01
····	6,307,628	10/23/01	Lu et al.			08/18/00
	6,314,379	11/06/01	Hu et al.			12/04/97
•	2001/0039462	11/08/01	Mendez et al.			04/02/01
	6,320,655	11/20/01	Matsushita et al.			03/15/00

EXAMINER

INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)

ATTY. DOCKET NO. 006301
USA/Consilium/Consilium

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EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	2001/0042690	11/22/01	Talieh			12/14/00
	6,324,481	11/27/01	Atchison et al.			06/15/99
	6,334,807	01/01/02	Lebel et al.			04/30/99
	6,336,841	01/08/02	Chang			03/29/01
	2002/0032499	03/14/02	Wilson et al.			05/04/01
	6,360,133	03/19/02	Campbell et al.			06/17/99
	6,360,184	03/19/02	Jacquez			03/26/97
***	6,368,883	04/09/02	Bode et al.			08/10/99
	6,368,884	04/09/02	Goodwin et al.			04/13/00
	6,379,980	04/30/02	Toprac			07/26/00
	6,388,253	05/14/02	Su			11/02/00
	2002/0058460	05/16/02	Lee et al.			09/14/01
	6,395,152	05/28/02	Wang			07/02/99
,	6,397,114	05/28/02	Eryurek et al.		· · · · · · · · · · · · · · · · · ·	05/03/99
	6,405,096	06/11/02	Toprac et al.			08/10/99
	6,405,144	06/11/02	Toprac et al.			01/18/00
•	2002/0070126	06/13/02	Sato et al.			09/19/01
	2002/0081951	06/27/02	Boyd et al.			02/20/02
	2002/0089676	07/11/02	Pecen et al.			04/26/00
7	2002/0102853	08/01/02	Li et al.			12/20/01
,	2002/0107599	08/08/02	Patel et al.			01/25/01
	6,435,952	08/20/02	Boyd et al.			06/30/00
	6,438,438	08/20/02	Takagi et al.			01/02/98
	2002/0113039	08/22/02	Mok et al.			02/16/01
	6,440,295	08/27/02	Wang			02/04/00
1. · 12.16	2002/0127950	09/12/02	Hirose et al.			03/08/01
	6,455,937	09/24/02	Cunningham			03/17/99

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

DATE CONSIDERED



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APPLICANT

Badri N. KRISHNAMURTHY et al.

FILING DATE August 14, 2001 GROUP 2171

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
· · · · · · · · ·	2002/0149359	10/17/02	Crouzen et al.			08/18/01
	6,479,902	11/12/02	Lopatin et al.			06/29/00
	6,479,990	11/12/02	Mednikov et al.			06/18/01
	2002/0185658	12/12/02	Inoue et al.			06/14/01
	2002/0193902	12/19/02	Shanmugasundram et al.			06/18/02
	2002/0197745	12/26/02	Shanmugasundram et al.			08/31/01
	2002/0197934	12/26/02	Paik			11/30/01
	2002/0199082	12/26/02	Shanmugasundram et al.			06/18/02
	6,503,839	01/07/03	Gonzales et al.			07/03/01
	2003/0020909	01/30/03	Adams et al.			04/09/01
	2003/0020928	01/30/03	Ritzdorf et al.			07/09/01

Hu et al.

U.S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS **EXAMINER'S** Translation **INITIALS** PATENT NO. DATE COUNTRY CLASS SUBCLASS Yes No 61-66104 04/04/86 X Japan X 3-202710 09/04/91 Japan X 01/23/96 8-23166 Japan X 9-246547 09/19/97 Japan X WO 98/05066 02/05/98 WIPO 02/10/98 X 10-34522 Japan 0 869 652 10/07/98 X Europe WO 99/09371 WIPO $\overline{\mathbf{X}}$ 02/25/99 X 0910123 04/21/99 Europe 0 932 194 07/28/99 X Europe WO 00/00874 01/06/00 WIPO X X 2000-183001 06/30/00 Japan

EXAMINER

6,517,413

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DATE CONSIDERED



ATTY. DOCKET NO. 006301
USA/Consilium/Consilium

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	.	FOR	EIGN PATEN	T DOCUMENTS				
EXAMINER'S INITIALS	PATENT NO.	DATE	C	COUNTRY	CLASS	SUBCLASS	Yes	lation
	1 071 128	01/24/01	Europe				Х	
	WO 01/18623	03/15/01	WIPO				X	
	WO 01/25865	04/12/01	WIPO				X	
	434103	05/16/01	Taiwan				Х	
	436383	05/28/01	Taiwan				Х	
	455938	09/21/01	Taiwan				X	
	455976	09/21/01	Taiwan				Х	
	2001-284299	10/12/01	Japan				Х	
	2001-305108	10/31/01	Japan				Х	
	2002-9030	01/11/02	Japan				Х	
	WO 02/074491	09/26/02	WIPO				X	
	2002-343754	11/29/02	Japan				Х	
		•		Title, Date, Pertin		<u> </u>	<u> </u>	<u> </u>
	Layer Coatings v 45-52. Moscow	with Laid-on Edd , USSR.	dy-Current Tra	of Thickness Insponseducers (Abstract)." Defektosko	opiya, vol. 17, i	no. 10, p	
	February 1984.	"Substrate Scree	ening Process.'	' IBM Technical D	isclosure Bull	letin, pp. 4824-	4825.	
	Vibrations (Abst	ract)." Technise	ches Messen TM	Ways of Elimination, vol. 55, no. 1, pp.	27-30. West	Germany.		haft
	Manufacturing: A 4, pp. 216-229.	An Application i	for LPCVD."	ber 1990. "Statisti IEEE Transactions	on Semicond	uctor Manufact	uring, v	v. 3,
	Evidence Integra n. 1, pp. 43-51.	ation: An LPCV	D Application.	uary 1991. "Conting" IEEE Transaction	ons on Semico	nductor Manuf	acturing	, ν.
	Larrabee, G. B. IEEE/SEMI Inte	rnational Semic	onductor Man	licroelectronics Fac ufacturing Science	Symposium, p	p. 30-34. Burli	ingame,	CA
				Modelling of SiO2 , pp. 379-384. IEE		chanical Polish	ing ———	
EXAMINER				DATE CONSIDE	RED			



ATTY. DOCKET NO. 006301 USA/Consilium/Consilium SERIAL NO. 09/928,474

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APPLICANT Badri N. KRISHNAMURTI	Technology Center 210 HY et al.
FILING DATE August 14, 2001	GROUP 2171

		August 14, 2001	2171		
	OTHER ART (Including Author, Tit	tle, Date, Pertinent Pages, Etc.)			
	May 1992. "Laser Ablation Endpoint Detector." IBM Technical Disclosure Bulletin, pp. 333-334.				
	Spanos, Costas J., Hai-Fang Guo, Alan Miller, and Statistical Process Control Using Tool Data." <i>IEI</i> 4, pp. 308-318.				
	February 1993. "Electroless Plating Scheme to H Disclosure Bulletin, pp. 405-406.	ermetically Seal-Copper Features	s." IBM Technical		
	Scarr, J. M. and J. K. Zelisse. April 1993. "New (Abstract)." Proceedings of the 36th Annual Tech				
	Matsuyama, Akira and Jessi Niou. 1993. "A Stat Japan." IEEE/SEMI International Semiconductor				
	Yeh, C. Eugene, John C. Cheng, and Kwan Wong. 1993. "Implementation Challenges of a Feedback Control System for Wafer Fabrication." <i>IEEE/CHMT International Electronics Manufacturing Technolo Symposium</i> , pp. 438-442.				
	Kurtzberg, Jerome M. and Menachem Levanoni. January 1994. "ABC: A Better Control for Manufacturing." <i>IBM Journal of Research and Development</i> , v. 38, n. 1, pp. 11-30.				
	Mozumder, Purnendu K. and Gabriel G. Barna. February 1994. "Statistical Feedback Control of a Plasma Etch Process." <i>IEEE Transactions on Semiconductor Manufacturing</i> , v. 7, n. 1, pp. 1-11.				
	Muller-Heinzerling, Thomas, Ulrich Neu, Hans Georg Nurnberg, and Wolfgang May. March 1994. "Recipe-Controlled Operation of Batch Processes with Batch X." ATP Automatisierungstechnische Praxivol. 36, no. 3, pp. 43-51.				
	Stoddard, K., P. Crouch, M. Kozicki, and K. Tsakalis. June-July 1994. "Application of Feedforward and Adaptive Feedback Control to Semiconductor Device Manufacturing (Abstract)." <i>Proceedings of 1994 American Control Conference – ACC '94</i> , vol. 1, pp. 892-896. Baltimore, Maryland.				
	Schaper, C. D., M. M. Moslehi, K. C. Saraswat, a Identification, and Control of Rapid Thermal Proc Electrochemical Society, vol. 141, no. 11, pp. 320	cessing Systems (Abstract)." Jou			
	 Tao, K. M., R. L. Kosut, M. Ekblad, and G. Aral. December 1994. "Feedforward Learning Applied to R' of Semiconductor Wafers (Abstract)." Proceedings of the 33rd IEEE Conference on Decision and Contro vol. 1, pp. 67-72. Lake Buena Vista, Florida. Hu, Albert, He Du, Steve Wong, Peter Renteln, and Emmanuel Sachs. 1994. "Application of Run by Rur Controller to the Chemical-Mechanical Planarization Process." IEEE/CPMT International Electronics Manufacturing Technology Symposium, pp. 371-378. Spanos, C. J., S. Leang, SY. Ma, J. Thomson, B. Bombay, and X. Niu. May 1995. "A Multistep Supervisory Controller for Photolithographic Operations (Abstract)." Proceedings of the Symposium on Process Control, Diagnostics, and Modeling in Semiconductor Manufacturing, pp. 3-17. 				
	Leang, Sovarong, Shang-Yi Ma, John Thomson, I Control System for Photolithographic Sequences.' vol. 9, no. 2.				
EXAMINER	D	ATE CONSIDERED			



ATTY. DOCKET NO. 006301 USA/Consilium/Consilium SERIAL NO.

APR 2 9 2003

(PTO-1449)	APPLICANT Badri N. KRISHNAMURTHY et al.				
	FILING DATE August 14, 2001	GROUP 2171			
OTHER ART (Including Author, Tit	tle, Date, Pertinent Pages, Etc.)				
Boning, Duane S., William P. Moyne, Taber H. Smith, James Moyne, Ronald Telfeyan, Arnon Hurwitz, Scott Shellman, and John Taylor. October 1996. "Run by Run Control of Chemical-Mechanical Polishing." <i>IEEE Transactions on Components, Packaging, and Manufacturing Technology—Part C</i> , vol. 19, no. 4, pp. 307-314.					
Zhe, Ning, J. R. Moyne, T. Smith, D. Boning, E. Del Castillo, Yeh Jinn-Yi, and Hurwitz. November 1996. "A Comparative Analysis of Run-to-Run Control Algorithms in Semiconductor Manufacturing Industry					

381. Yasuda, M., T. Osaka, and M. Ikeda. December 1996. "Feedforward Control of a Vibration Isolation System for Disturbance Suppression (Abstract)." Proceeding of the 35th IEEE Conference on Decision and Control, vol. 2, pp. 1229-1233. Kobe, Japan.

(Abstract)." IEEE/SEMI 1996 Advanced Semiconductor Manufacturing Conference Workshop, pp. 375-

Fan, Jr-Min, Ruey-Shan Guo, Shi-Chung Chang, and Kian-Huei Lee. 1996. "Abnormal Tred Detection of Sequence-Disordered Data Using EWMA Method." IEEE/SEMI Advanced Semiconductor Manufacturing Conference, pp. 169-174.

Smith, Taber and Duane Boning. 1996. "A Self-Tuning EWMA Controller Utilizing Artificial Neural Network Function Approximation Techniques." IEEE/CPMT International Electronics Manufacturing Technology Symposium, pp. 355-363.

Guo, Ruey-Shan, Li-Shia Huang, Argon Chen, and Jin-Jung Chen. October 1997. "A Cost-Effective Methodology for a Run-by-Run EWMA Controller." 6th International Symposium on Semiconductor Manufacturing, pp. 61-64.

Mullins, J. A., W. J. Campbell, and A. D. Stock. October 1997. "An Evaluation of Model Predictive Control in Run-to-Run Processing in Semiconductor Manufacturing (Abstract)." Proceedings of the SPIE -The International Society for Optical Engineering Conference, vol. 3213, pp. 182-189.

Reitman, E. A., D. J. Friedman, and E. R. Lory. November 1997. "Pre-Production Results Demonstrating Multiple-System Models for Yield Analysis (Abstract)." IEEE Transactions on Semiconductor Manufacturing, vol. 10, no. 4, pp. 469-481.

Durham, Jim and Myriam Roussel. 1997. "A Statistical Method for Correlating In-Line Defectivity to Probe Yield." IEEE/SEMI Advanced Semiconductor Manufacturing Conference, pp. 76-77.

Shindo, Wataru, Eric H. Wang, Ram Akella, and Andrzej J. Strojwas. 1997. "Excursion Detection and Source Isolation in Defect Inspection and Classification." 2nd International Workshop on Statistical Metrology, pp. 90-93.

July 1998. "Active Controller: Utilizing Active Databases for Implementing Multistep Control of Semiconductor Manufacturing (Abstract)." IEEE Transactions on Components, Packaging and Manufacturing Technology-Part C, vol. 21, no. 3, pp. 217-224.

Fang, S. J., A. Barda, T. Janecko, W. Little, D. Outley, G. Hempel, S. Joshi, B. Morrison, G. B. Shinn, and M. Birang. 1998. "Control of Dielectric Chemical Mechanical Polishing (CMP) Using and Interferometry Based Endpoint Sensor." International Proceedings of the IEEE Interconnect Technology Conference, pp. 76-78.

EXAMINER

DATE CONSIDERED



ATTY. DOCKET NO. 006301 USA/Consilium/Consilium SERIAL NO. RECEIVED

APR 2 9 2003

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	Badri N. KRISHNAMU	JRTHY et al.
	FILING DATE	GROUP
	August 14, 2001	2171
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it	le, Date, Pertinent Page	s, Etc.)

		August 14, 2001	2171			
	OTHER ART (Including Author, T	itle, Date, Pertinent Pages, Etc.)				
	Ouma, Dennis, Duane Boning, James Chung, Greg Shinn, Leif Olsen, and John Clark. 1998. "An Integrated Characterization and Modeling Methodology for CMP Dielectric Planarization." Proceedings the IEEE 1998 International Interconnect Technology Conference, pp. 67-69. Boning, Duane S., Jerry Stefani, and Stephanie W. Butler. February 1999. "Statistical Methods for Semiconductor Manufacturing." Encyclopedia of Electrical Engineering, J. G. Webster, Ed.					
	McIntosh, John. March 1999. "Using CD-SEM (Abstract)." JOM, vol. 51, no. 3, pp. 38-39.	Metrology in the Manufacture of	Semiconductors			
	Pan, J. Tony, Ping Li, Kapila Wijekoon, Stan Tsai, and Fritz Redeker. May 1999. "Copper CMP Integration and Time Dependent Pattern Effect." <i>IEEE 1999 International Interconnect Technology Conference</i> , pp. 164-166.					
	Meckl, P. H. and K. Umemoto. August 1999. "Achieving Fast Motions in Semiconductor Manufacturing Machinery (Abstract)." <i>Proceedings of the 1999 IEEE International Conference on Control Applications</i> , vol. 1, pp. 725-729. Kohala Coast, HI.					
	d T. Parikh. October Abstract)." 24 th					
	IEEE/CPMT Electronics Manufacturing Technology Symposium, pp. 258-263. Ruegsegger, Steven, Aaron Wagner, James S. Freudenberg, and Dennis S. Grimard. November 1999. "Feedforward Control for Reduced Run-to-Run Variation in Microelectronics Manufacturing." IEEE Transactions on Semiconductor Manufacturing, vol. 12, no. 4.					
	November 1999. "How to Use EWMA to Achieve SPC and EPC Control." International Symposium on NDT Contribution to the Infrastructure Safety Systems, Tores, Brazil. http://www.ndt.net/abstract/ndtiss99/data/35.htm					
	Edgar, T. F., W. J. Campbell, and C. Bode. December 1999. "Model-Based Control in Microelectronics Manufacturing." <i>Proceedings of the 38th IEEE Conference on Decision and Control</i> , Phoenix, Arizona, vol. 4, pp. 4185-4191.					
	Meckl, P. H. and K. Umemoto. April 2000. "Achieving Fast Motions by Using Shaped Reference Inputs [Semiconductor Manufacturing Machine] (Abstract)." <i>NEC Research and Development</i> , vol. 41, no. 2, pp. 232-237.					
	Oechsner, R., T. Tschaftary, S. Sommer, L. Pfitzner, H. Ryssel, H. Gerath, C. Baier, and M. Hafner. September 2000. "Feed-forward Control for a Lithography/Etch Sequence (Abstract)." <i>Proceedings of the SPIE – The International Society for Optical Engineering Conference</i> , vol. 4182, pp. 31-39.					
	Cheung, Robin. October 18, 2000. "Copper Interconnect Technology." AVS/CMP User Group Meeting, Santa Clara, CA.					
	Edgar, Thomas F., Stephanie W. Butler, W. Jarre Hwang, K. S. Balakrishnan, and J. Hahn. Novem Manufacturing: Practices, Challenges, and Possil	nber 2000. "Automatic Control in	Microelectronics			
EXAMINER	 r	DATE CONSIDERED				

SHEET 10 OF 11 SERIAL NO.



INFORMATION DISCLOSURE **CITATION IN AN APPLICATION** (PTO-1449)

ATTY. DOCKET NO. 006301 USA/Consilium/Consilium

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Badri N. KRISHNAMURTHY et al. FILING DATE

GROUP 2171

		August 14, 2001	2171
	OTHER ART (Including Author, Tit	l tle, Date, Pertinent Pages, Etc.)	
	Khan, S., M. Musavi, and H. Ressom. November Manufacturing (Abstract)." ANNIE 2000. Smart I St. Louis, Missouri.	2000. "Critical Dimension Con	trol in Semiconductor
	ACM Research Inc. 2000. "Advanced Copper M http://acmrc.com/press/ACM-ECP-brochure.pdf		& Beyond."
	Ravid, Avi, Avner Sharon, Amit Weingarten, Vlac CMP Planarity Control Using ITM." <i>IEEE/SEMI</i> 437-443.	dimir Machavariani, and David S	
	Chen, Argon and Ruey-Shan Guo. February 2001 Application to CMP Processes." <i>IEEE Transaction</i> 11-19.		
	Tobin, K. W., T. P. Karnowski, L. F. Arrowood, a Automated Image Retrieval System (Abstract)." A 2001 IEEE/SEMI, Munich, Germany.		
	Tan, K. K., H. F. Dou, and K. Z. Tang. May-June 2001. "Precision Motion Control System for Ultra-Precision Semiconductor and Electronic Components Manufacturing (Abstract)." 51 st Electronic Components and Technology Conference 2001. Proceedings, pp. 1372-1379. Orlando, Florida.		
	Heuberger, U. September 2001. "Coating Thickness Measurement with Dual-Function Eddy-Current & Magnetic Inductance Instrument (Abstract)." Galvanotechnik, vol. 92, no. 9, pp. 2354-2366+IV.		
	Wang, LiRen and Hefin Rowlands. 2001. "A No International Conference on Emerging Technology	gies and Factory Automation, pp	. 417-423.
	Moyne, J., V. Solakhian, A. Yershov, M. Anderson "Development and Deployment of a Multi-Comportion (Abstract)." 2002 IEEE Advanced Semiconol 130.	onent Advanced Process Control	System for an Epitaxy
	Sarfaty, M., A. Shanmugasundram, A. Schwarm, I. Hung, and S. Parikh. April-May 2002. "Advance Manufacturing (Abstract)." 13th Annual IEEE/SE Advancing the Science and Technology of Semicol Boston, MA.	e Process Control Solutions for S MI Advanced Semiconductor Ma	emiconductor unufacturing Conference.
	Campbell, W. J., S. K. Firth, A. J. Toprac, and T. F. Edgar. May 2002. "A Comparison of Run-to-Run Control Algorithms (Abstract)." <i>Proceedings of 2002 American Control Conference</i> , vol. 3, pp. 2150-215 Good, Richard and S. Joe Qin. May 2002. "Stability Analysis of Double EWMA Run-to-Run Control with the contro		
	Metrology Delay." <i>IEEE/CPMT International El</i> 363.		
EXAMINER	D	ATE CONSIDERED	



SHEET 11 OF 11



INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)

ATTY. DOCKET NO. 006301 USA/Consilium/Consilium SERIAL NO. 09/928,474 RECEIVED

APR 2 9 2003

	Technology Center 2100
APPLICANT	resimology contact 2130
Badri N. KRISHNAM	URTHY et al.
FILING DATE	GROUP

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.) Smith, Stewart, Anthony J. Walton, Alan W. S. Ross, Georg K. H. Bodammer, and J. T. M. Stevenson. May 2002. "Evaluation of Sheet Resistance and Electrical Linewidth Measurement Techniques for Copper Damascene Interconnect." IEEE Transactions on Semiconductor Manufacturing, vol. 15, no. 2, pp. 214-Itabashi, Takeyuki, Hiroshi Nakano, and Haruo Akahoshi. June 2002. "Electroless Deposited CoWB for Copper Diffusion Barrier Metal." IEEE International Interconnect Technology Conference, pp. 285-287. ACM Research, Inc. 2002. "ACM Ultra ECP® System: Electro-Copper Plating (ECP) Deposition." www.acmrc.com/ecp.html Applied Materials, Inc. 2002. "Applied Materials: Information for Everyone: Copper Electrochemical Plating." www.appliedmaterials.com/products/copper_electrochemical_plating.html. KLA-Tencor Corporation. 2002. "KLA Tencor: Press Release: KLA-Tencor Introduces First Production-Worthy Copper CMP In-Situ Film Thickness and End-point Control System: Multi-Million Dollar Order Shipped to Major CMP Tool Manufacturer." www.kla-tencor.com/news_events/press_releases/press_releases2001/984086002.html. Takahashi, Shingo, Kaori Tai, Hiizu Ohtorii, Naoki Komai, Yuji Segawa, Hiroshi Horikoshi, Zenya Yasuda, Hiroshi Yamada, Masao Ishihara, and Takeshi Nogami. 2002. "Fragile Porous Low-k/Copper Integration by Using Electro-Chemical Polishing." 2002 Symposium on VLSI Technology Digest of Technical Papers, pp. 32-33. Cunningham, James A. 2003. "Using Electrochemistry to Improve Copper Interconnects." March 25, 2003. International Search Report for PCT/US02/24859 prepared by the European Patent Office. Adams, Bret W., Bogdan Swedek, Rajeev Bajaj, Fritz Redeker, Manush Birang, and Gregory Amico. "Full-Wafer Endpoint Detection Improves Process Control in Copper CMP." Semiconductor Fabtech - 12th Edition. Applied Materials, Inc., Santa Clara, CA. Berman, Mike, Thomas Bibby, and Alan Smith. "Review of In Situ & In-line Detection for CMP Applications." Semiconductor Fabtech, 8th Edition, pp. 267-274. "Semiconductor Manufacturing: An Overview," http://users.ece.gatech.edu/~gmay/overview.html **EXAMINER DATE CONSIDERED**